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Some Points for Consideration in the Selection of Horses for Work in Towns.

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Mr. President and Gentlemen,—Though at first sight the title of my communication may hardly appear to be one of veterinary concern, yet I venture to think that on further consideration its importance will be realised, as it is intimately bound up with economics, both from our own and the owners' point of view. We want freedom from trouble, and the owner long service, in addition. The selection of animals, to my mind, does not rest so much upon the question of technical soundness as upon their suitability to do the work required, and I think that in some cases animals may be forgiven what appear to be certain blemishes, if they otherwise conform with the predetermined standard of suitability.

When I select animals for purchase, I have in mind the ideal horse for the particular work, and there are points, in addition to ability to do the work, which I look upon as necessary to all types, whether light or heavy. Among these is the ideal temperament, for I believe that a horse's length of service very largely depends upon this. He must be neither too keen or too sluggish; if he is too keen he worries himself, is difficult to match, gets shaken fore legs, strained loins and hind legs, in fact, wears to a shadow and pulls himself entirely out of shape. If, on the other hand, he is sluggish and not well matched, then it is his mate that suffers. There is a vast difference between a placid tempered horse who will shift and keep on shifting any load, and an irritable one who will do the same but solely by nervous force. Though they both do the work, I always try to avoid the latter type, as he soon wears out.

The ideal conformation is another important point common to all types. I, personally, like a horse with a sensible look about him, a small head, a fine jaw, large eyes, little ears; a Roman nose appeals to me in a heavy horse, as does a slightly dished face in a light one; neck "not on upside down," great depth of chest, good shoulders, muscular arms and big knees; he must not be back on them, neither may they be calf knees. Pasterns not too long, too upright, or sloping. In heavy breeds the hair on the legs should be soft and silky, and the less of it the better. His back must be short, he must be well ribbed up and his quarters must be strong; tail well set on, muscular thighs and second thighs, hocks strong and well set under him, hind legs not too straight or at all sickle shaped. The former are frequently conjoined with synovial distensions of the hocks, which, though seldom causing trouble, are unsightly. Good feet are essential, and I need not describe what I mean by this term, for to do so would necessitate reading a paper on that subject alone.

In action—and to my mind this is one of the most important, if not the most important point of all—he must be a light goer. I do not wish to infer that he must have high action, but rather, an elastic one. He must touch the ground, not hit it when trotting. Each fetlock joint must sink properly as the weight is transferred to that particular leg, and the fetlock joints of all legs must sink equally. He must put his feet down flat and true, neither the inside or the outside first, and with the toes turned neither in nor out. I do not like a horse which shows the soles of his fore feet as he comes towards me and goes "flop, flop" when trotting. I dislike a horse who rolls or labours; he is an unbalanced rascal, and though, if a Hackney, he may win prizes in the Show ring, he is not much use for work. I prefer them to go wide rather than close. One cannot, of course, always find one's ideal horse, and then the question arises as to what one should select, always keeping in view length of service and freedom from trouble. Personally, the last point I should sacrifice would be lightness of action, as already defined, coupled with good feet. There are many misshapen or ugly brutes that do a vast amount of work, but I have never come across one such, yet, that was not what I call a good mover, and had not good feet. My experience leads me to think that animals with elastic action are practically free from certain bone diseases. At the same time, I have frequently noticed that by some accident, such as heavy straining in starting a load, or slipping on a bad surface, a check ligament in a good mover has "gone." One rests the animal, patches it up, blisters or fires and turns it out to grass. After treatment the horse is returned to work now trotting sound, but the elasticity of the leg has not been regained, and later he develops the upright foot, the contracting heel and frequent ringbone with total incapacity for town work. This sequence of events is a particularly interesting point to my mind, and one to which I have given much thought. I find it difficult to come to a definite conclusion, but at the moment I am inclined to think that if a horse with elastic action develops a ringbone, then one should look for the primary cause of its appearance below and at the back of the knee, and not

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to hereditary taint. We all come across cases in which our attention is called to the enlarged pastern or coronet, that being the first symptom, in addition to temporary slight lameness, that the foreman has noticed; but if we make careful inquiries we usually find that the horse for some time past has been lying down on all possible opportunities, and when made to rise has held the affected leg up in the air for a few moments, has been "stiff" for a few steps, has then gone sound, and has consequently been kept in work—the strain, the existence of which manipulation of the leg discloses in these cases, being insufficient to render him unworkable, but more than enough to destroy the elasticity of the leg. In other words, I am inclined to look upon the occurrence of ringbone in the majority of cases in towns where the animals have been selected with due care, to be the product of loss of elasticity, resulting from strained check ligaments, and I do not think that foals bred from mares so affected are likely to develop the disease so long as the sire is sound. In favour of the idea that elasticity of action denotes freedom from this bone disease, though the coronets may appear enlarged, the history of the following case is interesting:—

A well-known Hackney stallion was in 1917 and 1918 "spun" by my father and other veterinary surgeons for ringbone. I, being ignorant of this, was asked to examine him for the Hackney Show in 1920, he then being five years old. Finding that his coronets were coarse, *but all alike*,—and that point is of importance—and at the same time being impressed by his wonderfully elastic action, I passed him, not knowing that my father had stopped him previously. He did well at the Show, but died from twist of the bowel some time after, and I was able to get his legs. On boiling out, they were absolutely sound, and I may tell you, gentlemen, that this proof of soundness was a great relief to me, especially in view of the fact that I had unknowingly reversed a decision given by my father. I have seen many of that sire's young stock since, some of them show his conformation, but they are all elastic goers, and I have passed any that have been submitted to me for examination, and as far as I have been able to trace them afterwards, none have been lame from ringbone. This is one of the cases which has made me decide to overlook what appear to be certain technical blemishes if the animal has the style of action that I want. It is easy to "crab" a horse for ringbone when, to the eye and touch, the pasterns appear enlarged, but I am of opinion that if they are all alike, and the animal has elastic action, one is justified in passing it—though, for one's own protection, it is well to call the client's attention to them. It is certain, of course, that the tendency to bone diseases is hereditary, but I think that in such cases the disease will be in evidence before the age at which animals are selected for work on the streets, and under any circumstances if affected they will not be good movers. I have in mind a case in bloodstock, in which practically all the produce of a certain sire (luckily in private ownership, and serving no outside mares), are so upright in their pasterns and such stilty movers, that they cannot be trained even as two year olds, yet the sire is apparently free from any unsoundness. This, I think, at the same time, is proof that a seemingly sound sire may produce unsound offspring. The horse I mention never won a race, though many of his antecedents were great winners.

To buy, or not to buy, horses with sidebones is an everlasting controversy. Personally, I do not like them, not so much from the point of view that they are sidebones, but on account of the complications which may follow. Though for single harness and slow work, given good feet and elastic action, I buy them, for double harness I am a little shy, as, should a tread from the mate occur, the results are not infrequently disastrous. As to condition, my taste varies with the age of the animal. I dislike a young, very fat horse; he has to melt before he makes muscle, and if he should fall ill, is usually very ill; alternatively, his legs may go to pieces before he becomes fit. A poor one I do not mind, so long as he is muscular, is not irritable and has a sound constitution.

I like to see trace and collar rubs on horses (so long as they are genuine), but I am always suspicious of one who is shown with such rubs, a wonderful "bloom" on his coat and at the same time smells of paraffin.

For the occasional buyer of horses, I am convinced that it pays to purchase from one or two reputable dealers, for though it will cost a pound or two more per horse, it saves endless running about on wild goose chases, and one has always the chance of returning any that do not come up to requirements. Reputable dealers are anxious not only to serve their clients well, but to keep on doing so, and I think it is preferable to let them run the necessary risks rather than do so oneself. I have found it advantageous from all points of view to purchase animals at decent prices which fulfil the conditions I have given rather than buy nondescripts at cheap rates, for the latter's length of service is so short that they are in the end very expensive purchases, the rate of depreciation more than nullifying the difference in original expenditure. I prefer to purchase mares rather than geldings because at the end of their service they fetch better prices.

There are many points upon which I have not touched, but I hope the discussion will give them prominence.

Discussion.

Mr. J. W. McIntosh: When I was asked if I would open the discussion on this paper, I very readily consented, because, in the first place, it is a subject in which I am directly and naturally very much interested, and, secondly, because it is one which has not hitherto received any attention at the hands of our Division—at least, so far as I am aware.

I should like, at the outset, to compliment my friend Mr. Sheather on his very practical paper and for the opportunity he has given us of expressing our views on this very important subject.

As I am in agreement with the essayist on practically all points, my remarks this evening will be more or

less an amplification of these rather than a criticism, and as the writer has confined his attention to "Horses Required for Work in Towns," I will not deal with any other class, excepting in so far as comparison may be useful.

In this mechanical age, when our streets are lined with self-propelled vehicles, we sometimes hear it said that the days of the horse are fast disappearing, and that soon those that are left will be relegated to our back streets. Well, gentlemen, these views need not be taken seriously, as they are the outcome of irresponsible minds; they are without depth and certainly without knowledge. It would probably surprise some of these prophets to know that there are more horses in London to-day than there were in 1913, which goes to prove that this animal is still an economic factor in the transport of our great cities, and it is encouraging to note that there is a widening circle who believe—and I am one of them—that the horse will be employed to an even greater extent in the years that are immediately before us. (Hear, hear.)

Mr. Sheather, in reviewing this subject, has very aptly classified his points under five main headings:—Type, conformation, action, temperament and techanical soundness, or, if you like, technical unsoundnesses.

Type.—It would be too much to expect that all of us could agree on this point, but perhaps the nearest approach to agreement can be found in that type known as the "Clydesdale." For general purposes and within the limits of his capabilities, there is no more adaptable animal. Clydesdales are constitutionally hardy, active, and no better legs can be found on any other breed. It is true that temperamentally they are as a breed a little hasty, and require careful, sympathetic and judicious handling during the first few months of their training, but once they are adapted to their surroundings and work, their activity and powers of endurance cannot be excelled by any other breed of horse. For heavy brewer's drays and similar work, where the weights are great and the pace slow, the Shire horse is probably advantageous. For certain purposes the Percheron and the Suffolk may be usefully employed; they are good doers, and temperamentally exceedingly docile. There are many other types which, of course, would have their place in your consideration when selecting an animal for a particular purpose.

Conformation.—With regard to conformation, this will vary somewhat according to type, but there are a few general rules which are applicable to all. The framework must be well developed, plenty of room for the lungs and heart, plenty of room for the digestive organs, well developed joints, short shanks and cannons, and last, but not least, good solid, open feet. If the chest be narrow, remember it can only be associated with limited lung and heart accomodation and all that that entails. If the barrel lacks depth and width it means limited storage, and with it, very frequently, impaired digestion and impaired stamina. The head should be small, plenty of width between the eyes. The eye itself prominent and bright, nice prick ears not too far apart, plenty of room between the rami of the jaw, the whole set on the body at a graceful angle. The neck not too short nor yet too long. Crest fairly well developed. The form and slope of the shoulder is important to observe, as the wear which a horse's forelegs will sustain is greatly influenced by this. Action is also very materially governed by the same cause. The knees and bones of the limb well developed and flat—not round. Pasterns not too short nor yet too long. The back should be short, ribs well sprung, plenty of width over the loins. The goodness of the hind legs is mainly determined by well proportioned loins, thighs and gaskins, with the hocks well set under, strong and wide. I dislike a fine hock. Tail well set up; drooping quarters I also dislike.

Having viewed in detail such points as I have mentioned, you can now proceed to examine its anatomical proportions, as the ability of the horse, no matter what type, to undergo great and sustained exertion, depends on a true balance of muscular power—in other words, "symmetry." Symmetry, however, must not be mistaken for a description of beauty. There are many plain-looking horses that are excellent in every other particular, but you will find, on examining them closely with the eye of an expert, that, although plain, there is a harmony of proportion which compensates for the apparent lack of "beauty." An animal may be very pleasing to the eye because of his condition, his rotundity of barrel and sleekness of coat, etc., but this does not indicate power; in fact, very frequently the reverse, if tested by the physical standard of power and endurance.

Action.—This, of course, is very important, and although desirable in all animals and almost essential in some, it is not of vital importance in horses required for heavy, slow work. Freedom and elasticity of motion are very graceful to witness and denote a well-balanced muscular control, but modification of the "ideal" may be overlooked in horses that have to perform this work at a walking pace—in fact, I should look upon extravagant action as a source of weakness under certain conditions. It must not be assumed, however, from these observations that I do not appreciate at its full value "action" as it is generally understood; what we are trying to get at to-night is the economic standard of efficiency to be looked for in horses required for work in cities.

Temperament.—The ideal temperament is undoubtedly a great asset, and is perhaps one of the most difficult qualities to estimate correctly, even after what must be a "limited" trial. When the nervous excitability predominates, the animal's disposition or temper is described as choleric or hasty, and there is nothing more objectionable if it persists, as such animals will very soon pull themselves to pieces and from the commercial standpoint are a bad investment. One has to distinguish, however, between courage and excitability due to change of surroundings and previous habits. This latter condition is soon overcome by sympathetic handling, but if it is an innate quality of

the animal's nature, then I do not think it is possible with all the care in the world to get rid of it; it not infrequently becomes worse, and the effect on the constitution becomes marked and permanent.

The opposite condition, although perhaps less objectionable in "town horses," is undesirable; I refer to animals of a dull, phlegmatic, sluggish temperament. They are only suitable for slow work, as they are inactive, tire more easily and their powers are very limited.

Technical Soundness.—I entirely agree with Mr. Sheather that the selection of animals should not rest so much upon this question, as upon their suitability to do the work required of them. Nothing can be more objectionable than a tall, leggy, flat-sided brute, with a big head set at an acute angle, with an immense, loose, sloppy side. They may be technically sound, but they are neither useful or ornamental, and will in nearly all cases come to grief very soon. Soundness of constitution, however, should stand out prominently in all animals, and I am afraid is the least looked for when making an examination. There may be many superficial blemishes and even defects which, although better absent, do not detract from the animal's working value, provided the animal answers the predetermined standard of conformation and action. Defects of constitution, should, however, never be overlooked, as they are indelible and everlasting and cannot be compensated for, no matter how good the conformation or how placid the temper. Many of these defects are hidden from the eye, so that it is not always an easy matter to find them out, and in some instances it is impossible, but when in doubt a "short trial" will usually suffice to determine the matter.

If users of horses could influence the ingenuity of breeders to breed only from animals of "sound constitution," freedom from hereditary defects and blemishes, with good legs and feet, uniting the sources of these perfections with a well balanced, symmetrically proportioned body, they would be doing a great service to the horse transport of our cities, for, after all, the best customer of the breeder or trader is the steady and certain employer of horse labour.

Mr. R. C. IRVING: I have had a very large experience in the working of horses and have listened to Mr. Sheather's paper with great interest, and must compliment him upon it. In the selection of horses for work you must do it on general lines and neither the essayist nor the opener of the discussion has emphasised the point of buying horses with short legs and deep bodies. I think that is much more significant that action, and that the last thing you should look for in a working horse is soundness—this is of no importance whatever. (Laughter.) A great many of the largest buyers never put a hand on the horse; I do not do so myself. There is a conformation which you get in horses, a slight bend at the knee, which I find does not stand work in town wear; I like a horse to be back at the knee. I have horses working in all the principal towns in England, for which I buy, and I find that there is a very distinct difference in the wear in different places. They never wear out in Manchester; in Liverpool they do not last anything like the time. I find that the shortest life you get in a horse is in London, and I attribute that to the amount of trotting work they do. It is an old and true saying that "it is the pace that kills."

Mr. Sheather says that fine hair is better than coarse. (Mr. SHEATHER: I said nothing of the sort). I find it is exactly otherwise: a coarse hair gets wet and causes dry sometimes, but a fine hair never—it is always grease. I will never buy a Shire horse; he is bred now until he is useless. I put the Percheron first as a wearer and the Clydesdale second. The worst thing a working horse can have is a lot of hair on his legs; it is a happy hunting ground for a number of parasitic diseases.

Mr. H. D. JONES: I should like to thank Mr. Sheather for his excellent paper. He has been so very tactful in what he has said, and his remarks are so much in line with what most of us think, that there is very little room for any argument. Mr. McIntosh comes from Scotland, and he has pointed out the good features of the Clydesdale. We all admit that they have good legs and feet, but my experience of a lot of these horses that come to London is that they have bad middles and are poor doers.

I quite agree with Mr Sheather's remarks with regard to the selection of horses. He mentioned temperament as a thing upon which the length of service often depended. I agree with him, but can he inform us how you can tell a horse that is going to be a "hot worker?" The essayist has not mentioned colour; I think there are certain horses of a very delicate colour that you do not like and that you would not buy. He did touch on sidebones. I consider them an unsoundness, especially in trotting horses. Of course, it may have been my misfortune to have lame horses which happened to have sidebones. (Laughter.) The essayist has given excellent advice *re* purchasing from a dealer of repute. My sympathies are with a man who has to buy a horse at a low figure for a poor client, when he is not allowed any elasticity as to price. It is a difficult position, because, after all, somebody has to buy the "throw outs." The tendency during the first period of one's qualified life is to pass nothing, but one soon realises how necessary it is in practice to adjust one's ideas in the light of experience.

Mr. S. H. SLOCOCK: The horse has been my hobby for a good many years, and though I cannot claim the experience of some of the gentlemen who practice in town, nevertheless, in viewing from the experience of many years the horse that is to be of service, I do not think we should trouble to select the animal with a small head. I have always been averse to the small and short headed animal with the prick ears. He has never, in my experience, been the genuine working animal that the horse with the normal big head has been. Fairly long ears have always been a fad of mine. Taking the old workers of the firms I have been acquainted with for a great many years, I have got back to the idea that my ideal of the horse when I started as a young man was the correct one. I was

reared, as you know, sir, amongst well-bred horses, the hunter and the race horse. The best type of blood horse is the best type of horse in this world, and if you want a horse to ride, drive, or draw a load, go back to the type of blood horse. He is the best balanced, most symmetrical horse that breeding has produced. A good blood horse does not necessarily have a small head, or prick ears, or a light topped neck. Give me a horse with a strong neck and one strong at his poll, and then he can carry a big ear.

One has to recognise that the Show horse is not always the best working horse, and I do not blame a horse for having an ugly head or sloping quarters. With a heavy horse these do not count: let such a horse be symmetrical, deep through his heart, deep through his back ribs, with a short top line and long under line.

In action you want no more than is understood by the old expression, "straight goer." A horse should be a good walker for whatever work you want him. The Shire horse is a good horse, also a bad one, and the Clydesdale is also a good horse, but he is also a bad one. You have your various types, in fact, in all breeds, and one has to plump for whatever type of horse you choose; you will get the good and the bad. If I were to say where to go to find the best horse from which to secure the best service, I would say get the weighty Irish horse, built on weight-carrying hunter lines. The action must be straight, the limbs must be good and the feet in particular must be good. I do not favour the horse with the short cannon bone. These go over at the knee more quickly than the horse with the long cannon bone. I do not favour the straight hock. When you get a droop rumped horse, slightly sickle hocked, I think things are in proportion and that the animal will wear well. In buying a horse, buy the best presented to you—one frequently finds in the horse giving the longest service the animal that does not come up to all the requirements for which a critical buyer looks.

Mr. PERRYMAN: I am sure we are grateful to Mr. Sheather for his paper to-night, and as a whole we are in agreement with him. We are also indebted to Mr. McIntosh for amplifying the paper. I think we are all agreed that conformation is a very essential feature. As Mr. Slocock has said, the difficulty is to find the ideal horse: you have to prove whether the horse is suitable for the work required of him. The place to which the horse is going should also be considered, and the treatment the horse will receive there. A great deal has been said about temperament: I think it is very important. It is really quite useless to think of buying a horse for town work, which is a highly strung and nervous animal. One generally forms a good idea of his character by going round a horse. Such a horse, too, is generally short ribbed and narrow in the flank. I think gait is the most important thing one can look to in London working horses. If one finds a particularly awkward gait—and I would emphasise the "pin-toed" animal—I think one finds that the horse seldom wears satisfactorily in London—so much so, that in the lighter bred animals I invariably reject a "pin-toed" horse. For that reason, I think we should be very careful in seeing the action. I think a sliding gait is most unsuitable for London; that applies particularly to the lighter breeds—they have a most unhappy habit of falling down. In selecting animals for work, I think one should take into consideration whether they are required for single or pair horse work; if the latter, you should point out to the client whether you consider the animal is fast, slow, or medium going. A fast horse will pull himself to pieces in pair with a slow one. For London work, generally, I hold that the lighter breed of horse will do more work and is a better animal commercially, than any of the heavy breeds, for the simple reason that they are expected to face more than the heavy ones, for all the horses trot in London to-day. The lighter horse is holding its own because it can compete with mechanical traction. As to the style of horse, I like what Mr. McIntosh said. I think the Clydesdale is the best horse for London work, because he is generally heavy enough to get along with a fairly big load. and he is active enough to do the trotting called for. I have a great objection to the Shire horse, because of his coarse head and legs, the latter, with their masses of long hair, being a great source of trouble in the London stables. In the average London stable to-day the Shire is a perfect nuisance; the men either leave the horses' legs alone, or turn the hose on them and leave them wet; in either case you get in time a mass of stinking grease. I think, therefore, his day is nearly over in London. In the Midlands and in Northern towns, the heavy horse is not made to trot, and that, I think, is the reason why he is holding his own there.

Mr. Sheather did not say anything about loads and a weight, and I think at a meeting like this it would be a good thing if we could get some idea of the weight a horse should pull as compared with his own body weight. A year ago the opinion was that a horse could only pull three times his own body weight. To my mind that is rather absurd. I have not the faintest idea on what basis that figure was arrived at.

In selecting animals one has to consider the cost. I find that the easiest examination I have is when I go to examine a really good animal at a high figure, because one knows what one is going to do. We have to take into consideration the cost of the animal, in giving our opinion. I think that in many cases the cheaper horses really cause a greater amount of worry than the expensive ones.

I should like to say a word in regard to the conformation of the shoulder. Occasionally we find a cart horse with very faultily shaped shoulders, and here the difficulty is to fit the collar, and unless you keep an eye on that horse you are going to get a lot of trouble in the region of the shoulder.

Mr. J. WILLETT: I should like to thank Mr. Sheather for his paper and to congratulate him on having given rise to such a good discussion. In the main I am in agreement with him: as a matter of fact most of his paper is not controversial. I was interested in Mr.

McIntosh's statement that there are more cart horses in London than ever there were—they have concealed them very well. (Laughter.) I agree with Mr. Sheather in regard to the size of the head: I do not think it makes any difference at all, however. With Mr. Irving, I favour the Percheron. The majority are good walkers and their temperament is such that they last as long as, or longer than, any other breed. They go back to the Arab more than any other breed, barring the race horse. I do not like thick, curly hair on the leg; I prefer the fine hair, which is much easier to clean. The curly-haired cart horses are scurfy and subject to itch. I am personally disappointed that Mr. King has not spoken as to the Shire because he is very enthusiastic about them. My chief objection to them is that they lack stamina. All the stamina the foals get seems to be on the maternal side, and that prejudices the breed. The enormous amount of hair they possess makes them come back very dirty whenever they go to plough. That is where the Percheron and the Suffolk score. I was very interested in the different schools of thought here in regard to the different breeds. As to unsoundness, I believe ringbone to be due much more to concussion than to heredity. Sidebones, however, are hereditary. I have in mind a mare, eleven years old, and she had become unsuitable, through infirmity, for London work. She had well developed sidebones, and she was bred from every year and for five succeeding foals all the progeny had sidebones before they were three years old.

Mr. W. S. King thanked the essayist and continued: I believe my nationality has not been attacked by my two Scottish friends, but my views have been. You say horses may be forgiven with regard to technical unsoundness, and with that I am in agreement. The subject of temperament has been raised, and it is of great importance. I make a practice of feeling the commissures of the lips, and "hot" horses of any standing will show a definite thickening there. I also examine the interdental space for any marks. It is my practice to put such horses by and increase their weight by two or more hundredweight, by which means they become lethargic. I like a cart horse with a cart horse head, and invariably a good cart horse has not a small head. I lay great stress on a good set of teeth, and make a common practice of examining them if I am examining for soundness. The essayist omitted two items in connection with the front leg of a horse. A slim, taut and razor-like limb with a good width across the hoof-head are, to my mind, two important elements, whether you view an animal from a show or from a working point of view.

The production of "grease" is a matter of lack of attention and not of fineness or coarseness of the hair, as so many people have hitherto given us to believe. Reference has been made to the subject of sidebones: if nothing else is in existence—that is to say, if no co-existing disease, such as ringbone or contracted heels are present—then horses with sidebones will do years and years of work. Mr. McIntosh referred to the Clydesdale as being the best breed of animal in the world. He has forgotten to tell you that the majority of them, especially the more finely bred ones, are nearly all the possessors of "bell" feet, than which nothing predisposes more to the formation of ringbone. They are also far too oblique of pastern, and so many of them are far too slack of loin. I have observed the Percheron bred animal to be susceptible to the development of sprained check ligaments and tendons, and records of these animals put on the boarded out scheme, coupled with observations made on animals bought on demobilisation when put to commercial usage, corroborate my views. In addition, this particular breed are also prone, by comparison, to azoturia. Dealing with the Suffolks, the majority of these animals are round barrelled, gummy legged, with a tendency to sesamoiditis, and invariably have contracted and brittle feet. Mr. Perryman said he thought the day of the Shire was nearing its close. I would advise him to go to Liverpool on May Day and he would alter his views. If this particular breed of animal is so despised, why is it that we are waiting yet for the Clydesdale or any other Society to produce geldings or mares which will draw an equivalent weight to the Shire? I am largely in agreement with the statement as to the amount of work an ill-shaped animal will do; it is often extraordinary.

Sir John Moore: I must compliment Mr. Sheather on his most practical paper, and Mr. McIntosh upon the manner in which the discussion upon it was introduced. I notice that the subject of the paper is horses for work in towns, and as my path has lain with the Army, I might be ruled out of order, but I should like to say that, in the course of the war we had in France alone 750,000 horses, and one got to know a good deal about the merits and demerits of those that took part. At the close of the war the Board of Agriculture sent over to France and asked for a report on the merits and demerits of various breeds of horses used. Sir Douglas Haig instructed the Director of Remounts and myself to furnish this report. The report is now in existence, and if it would be of any assistance to members of this Society I should be very happy to supply a copy to the Library of the R.C.V.S. (Applause.)

The concensus of opinion on the merits and demerits of the various breeds was that the best heavy breed of horse that took part in the war was the Shire horse. But the Shire horse, as a Shire horse, is not a war horse; he is too big—his demerit is the enormous ration he requires to keep him in health and condition. But he was so well thought of that at the end of the war the French people (who know good horses when they see them) were out to purchase all the Shire horses they could get. Some realised from £200 to £300 each, and even some of these were unsound. The Clydesdale, unfortunately, was not well thought of: we had so many inferior ones sent over, horses that were long in the leg and light in the middle and that were the subjects of sidebones. The Australians classed the Clydesdales above everything else: I was surprised at this, but I found the reason when I got to India immediately after the war. I had to do inspections of horses that had been purchased for Australia

and sent over to India for Mesopotamia. They were the very finest type of Clydesdale—that was the reason why all my Australian officers in France " plumped " for the Clydesdale. They cost £45 apiece landed in India, and the French would have given £200 each for them if they could have been landed at Marseilles. Mr. Irving and Mr. Willett make a great point of the Percheron. The Percheron, in my opinion, is a magnificient horse, but I do not think that he is a better horse than the Shire. He excelled in France because he was working in his own country. The Petit Percheron gave a very good account of himself. They also had the Bretons over there, and both are very good artillery horses. Such Suffolk Punches as we had were very good indeed, though they had a tendency to go wrong in the feet. Their temperament was excellent. To come back to the Shire, there is a small Shire you get bordering on Wales. We had a good many of these in the Army Service Corps, and I class them as quite the best draught horse of the war. The blood crosses of Ireland stand out above everything else for artillery purposes.

Mr. Sheather mentioned age—I should like to say that in the Army the rule was to cast horses at the age of 15, but during the war we abolished that altogether, because we found that many of our best horses worked very well after that age. That practice, has, in consequence, been ruled out of the Army for ever.

Mr. IRVING: The Percheron was introduced into England because of the excellent reports of his service we received during the war, and the disastrous reports of the Shire horse caused by his hairy legs never being dry while on the lines, and producing pneumonia.

THE REPLY.

Mr. SHEATHER: I thank you very much indeed for the kind way in which you have received my paper, and I am delighted with the discussion which has arisen. I am not sure whether I am pleased or disappointed with Mr. McIntosh's opening, perhaps I am both. That a man of his calibre and experience should say that he agrees with me on practically all points is flattering to me, therefore, being human, I am pleased, but I am disappointed that he could not find more material for criticism. I candidly wanted to pick his brains, not only to gain knowledge for myself, but also for other members of our Society.

In his remarks *re* type, he introduces the question of the value of various breeds of horses, a point, gentlemen, that I carefully avoided in my paper. I think, that to-day the average Clydesdale is not so good from the work point of view as he was ten to fifteen years ago, and the same remark applies to the Shire and Hackney. The Suffolk, as a contrast, has improved greatly during this period. The Percheron is an excellent animal, but I think that he has not yet been established long enough in this country, as a pure breed, for a decision to be arrived at concerning him.

Each has its own sphere of utility, and all are necessary to the country if its transport is to be efficiently carried out; the whole point being that suitable animals are chosen for the work to be performed. No matter what type I am buying, I always try to get them as near " pure bred " as I can, though I am partial to animals which appear to be the first cross of Clydesdale and Shire.

Concerning conformation, Mr. McIntosh introduces the term " symmetry which must not be mistaken for beauty." I entirely agree with him; indeed, I go further and say that you cannot have this qualified symmetry unless you have the type of action I have described; hence my statement *re* the mis-shapen or ugly brutes.

As to action, I am afraid that my experience does not lead me altogether to agree that if one wants the highest economical value, action is not vital in horses required for heavy slow work, and I think that, on this particular point, Mr. McIntosh has not quite understood my definition of action. I stated " that it need not be necessarily high or, to use Mr. McIntosh's term, extravagant; but it must be elastic and it is on this elasticity that I base my definition; and I maintain that a heavy horse worked at a walk, should show this elasticity when trotted in hand, just as much as the lighter breeds, if long service is required.

Elasticity denotes balance, and the two cannot be separated, in my opinion.

On his remarks regarding temperament, I have no comment to make.

On technical and constitutional soundness, Mr. McIntosh and I agree entirely.

Mr. Irving spoke of the depth of body and short legs. Can he explain how one can find depth of body that does not mean depth of chest? I do not agree with him regarding action. I have built up my ideas of action on experience and have learnt a certain amount about it, and the result of what I have learnt is in my paper. I mentioned that if you select a horse that is suitable for his job it does not matter what sort of a horse he is so long as he has the action I described.

Mr. Jones mentioned that for the first period of your qualified life you pass nothing. I would go further, and say for the first five years you pass nothing, for the second five years you pass everything (laughter) and that after that period you adopt a middle course. In regard to colour, a good horse could not be a bad colour.

Replying to Mr. Slocock, I did not mention prick ears in my paper, but prick ears may denote either blindness or excitable temperament. I think if it was a question of selecting a horse with a big head or one with a small head, both being heavy horses, I should prefer the small-headed one. I think the big-headed one would do the work, but I maintain that the small-headed animal has quality about him which the other lacks. Mr. Slocock also mentioned Show cart horses: as a matter of fact we do not want Show cart horses. (Laughter.) Mr. Slocock put it extremely well—what we want in the cart horse is the short top and the long under line. He also said that sickle hocks wear well. I do not like them. The question has also been raised of having to purchase the horses that clients want you to. I think we should purchase horses in plenty of time—you must have time to get what you want. The same thing applies to Mr. Perryman; and, in addition, you must get to know your dealers, who will then let you know when they have the horses you require. Tem-

perament can largely be gauged from our inspection of the animal. Mr. Perryman also spoke about action. For draught horses in London of the lighter types I invariably try to find horses that step short; they are much less liable to fall down. The question of loads and weights is really outside the scope of my paper, though the bearings on the wheels of the vehicles used are important in relation to the drawing of loads. Mr. Perryman also spoke about the cost of the animals and the examination which they should go through. It is a matter in which one must have enormous scope, because you have to use your brains and advise your clients as to whether the animal is worth purchasing or not. Soundness does not matter, nor conformation of the shoulder, provided the horse is a good mover, as such a horse cannot have a bad conformation.

In reply to Mr. Willett I do not think we are justified in forming any opinion as to the work of the Percheron in this country yet, because that animal has not been here long enough for us to know what he can do here. If the Percheron is going to breed in this country the same sort of stuff as he does as the other side (as a pure bred) I do not think that we want him. Mr. Willett agreed with me on the question of hair. He also spoke of the stamina of the Shire. That is an open point. I have got a stud of quite a few Shires in this country which show an average length of service of seven years, which is good. I am inclined to think that the Suffolk is one of the coming animals. Mr. King examines the animal's jaws as a guide to temperament. So do I. I am also in agreement with him as to the importance of examining the teeth. In my experience, the big-headed animal tires more easily than the one with the small head.

Mr. King spoke of the desirability of the razor-like limb and the broad hoof head: I thought he was a Shire man, but these are rather characteristic of the Clydesdale. I agree with him that the best horse for work in London is the first cross between the Shire and the Clydesdale, but you cannot get them.

Sir John Moore raised a very interesting point as to the utility of the various breeds in France. I took over the Mobile Section of the 58th Division, and my Shires were all exchanged in a very short time for Suffolks.

Glasgow Veterinary College.

PROTEST AGAINST WITHDRAWAL OF GRANTS.

(Reprinted from *The Glasgow Herald.*)

The Royal Faculty of Physicians and Surgeons of Glasgow, having considered the proposal of the Board of Agriculture and of the Government to withdraw grants from the Glasgow Veterinary College, is unanimously of opinion that the continuation, maintenance and advancement, rather than the extinction of the Veterinary College as a centre of teaching and research are urgently called for in view of the following considerations:—

1. The Board of Management is representative of the most advanced educational, administrative, and economic interests in the West of Scotland.

2. Glasgow is indubitably the most convenient and suitable centre for students drawn from an area embracing one-half of the entire population of the country.

3. The success of the Glasgow college, both in the number and in the quality of its students fully justifies its continuance, and makes the question of its extinction one that cannot be regarded without astonishment.

4. The work of the college in relation to the diseases of man and the lower animals is of vital importance to medical science and public health, in both of which Glasgow has a profound and intimate concern, and for the study of which the whole country is calling loudly for every encouragement the Government can possibly give. The processes of disease being essentially the same in man and the lower animals, comparative pathology is essential to the mutual advancement of human and veterinary medicine.

On these grounds the Royal Faculty of Physicians and Surgeons of Glasgow deplores the proposal to concentrate the teaching of veterinary medicine in one centre in Scotland, and enters its protest not only with regard to that proposal, but also against the proposed withdrawal of grants-in-aid by the Scottish Board of Agriculture towards the expenditure of an institution which has so amply justified its existence, and is so essential to the progress of education and science in the West of Scotland.

(Signed) T. K. MONRO, President.

The Royal Veterinary College Research Institute.

The *News of the World* in a recent issue drew attention to the "important development" at the Royal Veterinary College, London, in connection with veterinary research. In the course of the article that paper states:

"Lovers of animals will be interested in the developments that are taking place in connection with the Royal Veterinary College, St. Pancras. There has probably been as much progress in veterinary science in the last decade as in the field of medical research, and an institution which is training members of the profession for their future careers must needs be up-to-date in its equipment. The college was founded in 1791 for the encouragement of veterinary science by advancing the study, treatment and cure of diseases in domestic animals. At times, as may be imagined, its progress was slow, but in later years new discoveries have followed closely upon one another, and the bonds of knowledge have been tremendously widened. Thus it became necessary, if the college were to keep pace with the times, that it should have as an adjunct a research institute of animal pathology. The new building, which is nearly completed, adjoins the college, and is a handsome addition to the architecture of the neighbourhood. The foundation stone was laid by the Duke of Connaught nearly a year ago. The importance of this new departure will be appreciated in circles far wider than those concerned with domestic pets. Agriculturists, whose flocks and herds are often depleted by some mysterious disease which baffles the professional mind, may look to the new research school to make the most exhaustive enquiries in the direction of tracing the origin of ailments which in a single season may almost spell ruin to a farmer. The Royal Veterinary College is the principal

training school for the veterinary profession in England and the clinical instruction which it imparts is unrivalled. Some of the most eminent men in the profession have qualified at St. Pancras under Sir John McFadyean, the principal. The infirmary patients are chiefly those of subscribers, but in addition, accidents and urgent cases are admitted at all hours of the day and night. A considerable portion of the building is occupied as an infirmary for sick and injured animals. It is noticeable that even now, in these advanced days, no kind friend of the college has realised how much its work is handicapped by the absence of an X-ray apparatus. There are many occasions on which the aid of this almost indispensable scientific discovery has to be invoked. There is also an out-patients' department. There poor people, who are unable to pay for the services of a veterinary surgeon, receive advice and treatment for their animals, ranging from the coster's donkey to the charwoman's kitten, for a shilling fee. Last year over 8,000 such cases were dealt with, and as no expense is spared in the anæsthetics, drugs, etc., considered necessary for curing or lessening the sufferings of animals, this department is a heavy drain on the college finances. It is unfortunate that the work of the institution has been hampered owing to lack of funds. For many years the income has not been sufficient to meet the expenditure. In a museum filled with curios of the operating room, there is the skeleton of Lord Chaplin's famous racehorse, "Hermit," which won the Derby in 1867."

Light Horse Breeding.

War Office Show and Army Needs.

(Reprinted from *The Times*).

"The recent London Show of thoroughbred stallions arranged by the War Office, in conjunction with the Hunters' Improvement and National Light Horse Breeding Society, reminds us of the drastic change effected two years ago when the responsibility for light horse breeding was transferred from the Department of Agriculture to the War Office.

"Has that change been justified? It is not easy, in fact, to see why a purely civil industry such as horse breeding should be confined to a War Department. It is not so abroad. The organisation of an army for war certainly means the adaptation of the nation's civil resources to the needs of national defence; but that does not involve the control of those resources in peace time by the War Department. An army needs Class A men of intelligence, for example, but the War Office is not therefore charged with the duties of the Ministries of Health and of Education. Why, then, should the army (because it wants horses) usurp the functions of the civil department which deals with other forms of animal culture?

"The solution of the mystery appears to lie in the reluctance of the Department of Agriculture to undertake the fostering of an industry in which it does not believe. For years before the war discussion went on between the Agricultural and War Departments, the latter urging that adequate steps should be taken on Continental lines to ensure that a sufficient supply of animals of the types required should be forthcoming on mobilisation. Even then the increase in motor vehicles and the rapid disappearance of the light draught or gunner type of horse from the streets were causing anxiety, so much so that two heavy horses were substituted for four light horses in all transport wagons, but even so scores of thousands of light draught horses were needed for artillery and first line transport vehicles, besides riding horses for cavalry and other arms. It was of these types of animal that the Board of Agriculture was urged to encourage and facilitate the production.

Military Requirements.

"The Board disclaimed all responsibility for what it considered to be purely military requirements. How, the Board argued, could it honestly recommend the farming community to embark in breeding hunters which did not pay owing to the increasing difficulty of finding a market for inevitable misfits? As for light-draught horses, that type, as such, had not for years been bred in England in any quantity; 90 per cent. of the old omnibus horses (ideal gunners) were imported from America, and if such were needed again they could again be imported. In short, the Board was reluctant to spend time and money on a dying industry, and urged the War Office to take over the job itself. Evidently the Board's view prevailed, and light-horse breeding is now included among the duties of the Director of Remounts, and the necessary funds are provided in Army Estimates.

The question which concerns us is whether the change has been justified, and whether the Director of Remounts has a clearly defined policy, and is carrying it out with energy. In other European countries where a civil Department looks after horsebreeding it does so admittedly with the miiltary end in view, but its dominant consideration is the producer, whose desire for weighty stallions that will produce weighty animals of the highest market value must be as far as possible reconciled with the Army's need of something lighter, tougher, and capable of existence under war conditions. Our Director of Remounts' task is immensely simplified by the withdrawal from the business of the Board of Agriculture; he can admittedly concentrate on Army types alone.

"Horses in use and likely to remain in use in Great Britain are practically confined to the two classes, hunters and agricultural horses, and the fashionable types of both are bigger than the Army wants. The fashionable hunter is 16 hands and over, designed to carry a man fast over a big country at the outside three days a fortnight with the best of care, food, and accommodation; the troop horse is 15.2, and must carry a heavy load day after day under service conditions of scanty food and water and of exposure. So with the draught horse; it is notorious that in the late war the English heavy horses compared unfavourably in stamina and resistance to hardship with those from America. There is no true type of English light draught horse; what we have are misfit hunters or heavy cart horses. What we may expect to see is a gradual change in the type of premium stallion in the direction of reduced height, shorter legs, and shorter backs—incidentally, it would be interesting to follow the French plan of showing in the programme the official measurements of height, girth and bone below both knee and hock.

Better Records.

"Is it not possible, too, to arrive at some method by which the real value of a sire's progeny can be ascertained and credited? The large staff of district remount officers distributed about the country, if of the right sort, should be able to inform their director accurately of the breeding of all winners of point-to-point races and of outstanding performers in the hunting field, as well as of winners in the show ring, which must, after all, have conformation and action. A stallion's reputation as a stock getter is always known in his district, and should be reported to the Director by his officers; and we should like to see more definite records kept. For example, premium stallion owners should issue service cards for each mare, and the progeny should be registered in the remount offices, and the breeding of remounts should be entered, when possible, on their descriptive forms at purchase. The Director would thus know his premium stallion's value, and place his knowledge at the judge's disposal.

"It is not apparent that the Director is taking any steps in the matter of light draught horse breeding. The experience of the Great War is available in his office in the

form of reports from all the Army Corps and Divisions, which show very clearly the value of the Percheron as a draught horse sire. The hundreds of thousands of gun horses that were imported from America were all of one distinct type, and plainly showed their Percheron blood. This was the same horse that used to pull the London omnibus, and so well did he do in the war, not only in France but in other theatres as well, and so obvious is the lesson, that a number of public-spirited gentlemen formed a British Percheron Horse Society, the result of which is seen at all the important agricultural shows.

"It is not an impossible suggestion that the War Office scheme should include premiums for Percherons and other clean-legged cart horse breeds of Suffolks, and that classes for stallions should be added to the War Office Show. Especially on the outskirts of the pony districts of Devonshire, Wales, and the Northern Dale countries smaller types of Percheron and Suffolk would be valuable. America, Canada and France show that, no matter what you put him to, a Percheron gets something useful.

"We can no longer rely on Ireland as a source of supply. Impressment in that country is impossible, and there is always the fault of lack of condition in the bulk of Irish horses to be bought voluntarily. For mobilisation, horses must be drawn from those in work in the civil life of Great Britain and Ulster; their numbers are constantly decreasing, and at a faster pace than are the Army's needs; it is therefore increasingly essential that the proportion fit for and of the types needed by the Army should be as large as possible.

"It is with this aim always before him, and no other, that the Director of Remounts can go to work and make efficient use of the money and the very considerable staff of remount officers placed at his disposal."

LONDON UNIVERSITY INTER-COLLEGIATE HOCKEY TOURNAMENT FINAL.

University College 5. *Royal Veterinary College* 3.

On Friday, March 13th, the final of the Inter-Collegiate Hockey Tournament was played between the Royal Veterinary College and University College, London.

The game was fast and hard throughout, and the Veterinary College side had slightly the better of the game, but although they pressed the opponents' goal hard, they did not meet with much success.

R.V.C. opened the score early, but were down 1—2 at half-time, for shortly after University College equalised. Scoring alternated until three all was reached. The score stood thus for a long time, and although the Veterinary College forwards did their best, they were a little too eager and, perhaps, too excited, and failed to combine well and shoot straight when their chance came. University College scored two goals near the end of the match, making the final score 5—3 in their favour.

There was no reason to be pessimistic about the result before the final match, since the team had achieved two brilliant victories of 9—1 and 9—0, which brought them to the final. The Veterinary College turned out nearly to a man to give their hearty and noisy support.

This is the Hockey Club's second season only since the war, and the first time the College has reached the final round of the Hockey Tournament. It is hoped that this last minute failure this year will make enthusiasm the more keen next season. N. S. BARRON, *Hon. Secretary.*

A Danish pharmacist, M. Hallas Mœller, is reported, says *The Times*, to have succeeded in isolating the vitamine "fat soluble A" in cod-liver oil and in making it possible to adminster the vitamine in tablets. By this method of administration it is asserted a quart of cod-liver oil will have the same effect as a barrel administered as formerly would have. M. Mœller is also said to have prepared the vitamine in a fluid form suitable for injection in cases where cod-liver oil cannot be taken.

His discovery has aroused much interest in scientific circles in Copenhagen.

The Veterinary Record.

28th March, 1925.

REPORT OF THE DEPARTMENTAL COMMITTEE ON FOOT-AND-MOUTH DISEASE.

On the 8th February, 1924, Mr. Noel Buxton, then Minister of Agriculture and Fisheries, appointed a Departmental Committee to enquire into and report upon the circumstances of the recent outbreak of foot-and-mouth disease, to review and report upon the slaughter policy and the procedure adopted by the Ministry and to advise as to any further precautions against the introduction of the disease which might be considered desirable. This report is now published (*Command paper* 2350), and will be read by everyone with the very greatest interest. It is of especial interest to members of our profession, and we think that it should be carefully studied by them, for there is much in it which affects us as a profession, and much that needs to be thoroughly understood and accepted by us in our individual daily work if we are properly to undertake the responsibilities which devolve upon us as the guardians of the health of Britain's livestock.

The report is an exceptional one in every sense of the term. It gives some proof of the enormous amount of work performed by the Committee, but it does much more than that—it is a historical document, giving in the most concise manner the narrative of the outbreak and the ascertained cause of the spread from one district to another while, at the same time, it is a considered argument in favour of the slaughter policy of the Ministry. It would be futile to attempt to deal with the whole report in the space of one article, even if consideration of space permitted, and therefore we shall to-day confine our remarks to a general survey of the report. The Committee held twenty-one sittings, occupying forty days, and examined some 120 witnesses (some of these were examined more than once); they also visited landing places at Fleetwood, Birkenhead, and Glasgow. Their work to some extent supplemented that of the 1922 Committee, of which some of the present Committee were members. When the amount of evidence is considered and the difficulty of the subject, the Committee is to be congratulated on bringing out its report so promptly. That the report should take such a clear and concise form, while at the same time retaining all the essential points

and retaining its interest, is a further matter for congratulation to those on whom the drafting devolved.

The history of the original outbreak of this 1923-4 series is detailed at some length, and a veterinary surgeon at Blackpool is held to be "the unwilling agent whereby infection was introduced to the landing place." There was a primary outbreak at Blackpool, and though he had taken precautions to disinfect himself and his clothes, it is held that the disinfection proved insufficient. His visit to cattle at the landing place next day was not known to the Ministry who, having no reason to fear infection at Fleetwood, allowed these cattle to be moved to Crewe. At Crewe an animal was seen two days later suffering from suspicious illness by Mr. Manuel who, however, did not, so the report says, immediately issue the standstill order. Restrictions were not imposed until fifteen hours had passed and during this time animals in the market were being hurriedly removed owing to the rumour spreading that the disease had been found in the district. In this way foot-and-mouth disease was carried to many new centres and in Cheshire the number of outbreaks increased during the next eight weeks with such alarming rapidity that in the week ending December 29th no fewer than 211 outbreaks were confirmed in that county alone. The evidence regarding the other main centres of the outbreaks, namely, the West Riding group, Newcastle-on-Tyne, Scottish, and Northamptonshire groups is also analysed, and so far as possible the cause ascertained. Eleven pages of the report are occupied in dealing with arguments for either slaughter or isolation, and the case for slaughter could scarcely have been put forward more forcibly. The report further says: "A policy of isolation would be equivalent in our view to the abandonment of any hope of eradicating the disease from this country." Also we quote: "The eradication of a prolonged outbreak by the slaughter of large numbers of valuable stock naturally focusses public attention on the somewhat crude method of dealing with a disease which is admittedly rarely a fatal one, but, much as we detest the method, we are unshaken in our belief that until a preventive agent is available, the slaughter policy should be continued. "There is no difficulty in curing the disease, even without professional assistance, but until some preventive is available to protect adjacent stock during the progress of the case, there is the risk of its apread by the many channels already indicated.

"Until the pathology of Foot-and-mouth disease is better understood no other policy seems practicable, nor is there any conceivable means of avoiding those primary outbreaks which are apparently air-borne, so that the enemy is within our gates before we are aware of him." The report deals with the procedure adopted in the case of individual outbreaks, and emphasizes the fact that the most fruitful cause of the spread of the disease is the indifference of owners to the vital importance of early and prompt notification, and here a special paragraph, which we quote in *extenso*, is addressed to the veterinary profession :—

> "A great responsibility also rests upon the Veterinary Profession in view of the provisions of the Animals (Notification of Disease) Order of 1919, which requires them to notify the suspected existence of Foot-and-mouth disease. How great this is, and what failures may occur, is clearly shown from the incidents already referred to at Crewe, and we desire to impress most strongly on veterinary surgeons the necessity for accurate knowledge and prompt action in notifying any case to which they are called in their private capacity in which there is the slightest suspicion of Foot-and-mouth disease."

The remainder of the report deals with general precautions against the introduction and spread of the disease, the organisation of the Ministry's Staff and the question of insurance.

We must leave the consideration of some of these details for future articles. Many of them are of such importance as to deserve separate and special consideration. The report runs to 86 pages, and may be obtained through any bookseller from H.M. Stationery Office at the price of 1s. 6d. We strongly recommend members to obtain a copy.

Royal College of Veterinary Surgeons.

Obituary.

Caldwell, J. Y., M.R.C.V.S., Stranraer, Wigtownshire. Aged 61 years. Graduated Jan. 15th, 1887. Glasgow. Died March 20th, 1925.

Diploma in Veterinary State Medicine.

Manchester University examination result lists state: The following have satisfied the Examiners in Part I. and Part II. of the Diploma in Veterinary State Medicine Examination :— R. C. Locke, M.R.C.V.S. ; R. Lovell, M.R.C.V.S.

Appointments.

Mr. Reginald Lovell, M.R.C.V.S., has been appointed Demonstrator in Bacteriology in the Department of Bacteriology and Preventive Medicine, University of Manchester.

The following Graduates of the Royal (Dick) Veterinary College, Edinburgh, have received permanent appointments under the Ministry of Agriculture and Fisheries:—Ernest R. Callender, Bishopton, Durham ; Ernest R. Corrigall, Crieff, Perthshire ; Hugh M. M. Duff, Milnathort, Kinross ; George Edmondson, Burnley, Lancashire ; Edward F. Hardwick, Belper, Yorkshire ; James Mackintosh, Embo, Sutherlandshire ; John Small, Edinburgh, and Robert J. P. Watson, Edinburgh.

CLINICAL AND CASE REPORTS.

The Period of Incubation of Tetanus.

By Captain Glynn Lloyd, D.S.O., R.A.V.C.,
Equitation School, Weedon.

With reference to the case of tetanus, indicating a long incubation period, reported by H. Taylor, F.R.C.V.S., in the *Veterinary Record* of March 7th, 1925, the following is a record of a case of tetanus which occurred in a horse (Windfall) Army No. 32008, belonging to The Equitation School, Weedon.

The horse sustained a deep punctured wound on the inside of the off hock, near the point of the astragalus, by falling into a drain at Willoughby, Warwickshire, when being hunted on the 8th January, 1925. The animal was extremely lame and was admitted to The Equitation School Sick Lines on that date.

The wound became septic, discharging freely for several days, but eventually healed up normally, and the animal went sound. The case was discharged from the Sick Lines as cured on the 26th January, 1925. No anti-tetanic serum was administered at the time of the accident.

On February 3rd, 1925, the horse was noticed off its feed and was sent to the Sick Lines. Unmistakable symptoms of tetanus were observed. The jaws were nearly completely locked. There was trismus of thyrohyoid and sterno-maxillaris muscles, the nose was poked out, and the tail elevated. When the head was raised, the "haw" flicked over the eyeball. No hyperæsthesia was evidenced.

An alœtic ball (4 drachms) was administered with the balling gun. The hock was deeply cauterised with acid carbolic liq. Anti-tetanic serum was injected subcutaneously. The horse was fed on a sloppy diet and given eggs and milk.

During the first week progress was slow, and the appetite capricious. On the fifth day he got down and was raised with difficulty, and from this time onwards the horse was placed in slings.

The horse has continued to make good progress and is now (March 10th) convalescent.

A Urethral Stricture in the Cat.

By J. M. Buchanan, Class "D," Glasgow Veterinary College.

The following case shows the unfortunate sequelæ which may follow a careless castration and also the conditions which follow a stricture of the urethra.

Subject.—A black kitten about eight weeks old, which the owner stated to have been castrated by a local butcher while the family were on holiday. Since the operation the animal had shown a continual dribbling of urine, and also a large swelling, which had considerably alarmed the owner, had appeared in the abdomen.

On examining the cat, one testicle was found to be present in the scrotum, and a partly healed scar was noticed on the penis, from which the urine was constantly exuding. The most noteworthy point, however, was the presence of a large swelling in the abdomen and extending from the sternum to the pelvis. The cat did not show any pain on percussion or palpation and no fluid could be detected. The only other symptoms shown by the animal, were those of constipation and anorexia.

Diagnosis.—No definite diagnosis was arrived at, because of the abdominal swelling, which was completely baffling. Obviously it had to be one of the following: 1.—A foreign body. This had to be ruled out of account as no foreign body of that magnitude could have been swallowed or have grown during the kitten's short life. 2.—A tumour. For the same reason this had to be discarded as a tenable theory, since no tumour of a malignant nature could have grown sufficiently to have given rise to such symptoms. 3.—Ascites. Although this seemed the most obvious theory, the results obtained on percussion and palpation, seemed to negative it.

Treatment.—The animal was placed on a course of saline purgatives. Several unsuccessful attempts were made to pass the catheter. During this time the scar on the penis had healed, but the abdominal swelling had increased, and so the animal was destroyed, as it was suffering pain and the owner did not desire it to undergo further treatment.

Post-mortem.—The abdominal tunic was very tense. On opening into the abdomen the first organ to be encountered was the urinary bladder, full of fluid, the organ extending from the pelvic girdle to the sternum and being embedded in the liver. The intestines were pushed to one side to accommodate the liver, but otherwise showed nothing abnormal. The stomach was anæmic, small and contracted; a little viscid mucous was present. The pancreas and spleen were normal; the liver enlarged, dark and friable. There was no enlargement of the kidneys, but the left showed hæmorrhages from the renal artery. Both organs were in a state of acute venous congestion and the capsules stripped very easily. No ecchymosis or hydronephrosis was present. The bladder, as already stated, was very much enlarged and contained 6 ozs. of pale urine. There was no cystitis present. The ureters were slightly distended. There was a stricture in the extra-pelvic part of the urethra, with much fibrous thickening.

The Late Mr. Stableforth.

Mr. William Parkinson Stableforth, F.R.C.V.S., of Stanhope, Honiton, Devon, veterinary surgeon, who did a large amount of work for the Government during the war left (net personalty, £537), £2,698.

REVIEW.

[**Diseases of the Horse's Foot.** By H. Caulton Reeks, F.R.C.V.S. Demy 8vo. Pp. xii. and 568, plates and figures 193. 1925. (London: Baillière, Tindall & Cox. 21s. net).]

It is now nearly twenty years since the 1st edition of this book appeared, and in the interval a large number of practitioners has entered the profession, to many of whom this work may be an unknown quantity, as it has been out of print for a considerable time.

In this edition there are 13 chapters.

After an introductory chapter, the 2nd and 3rd chapters deal with the anatomy and physiology of the foot. The chapter on anatomy might well have been more carefully revised, there being quite a number of errors: figs. 9, 10 and 13 are exceedingly crude; fig. 13 "Medium Section of the Foot," shows the straight sesamoidean ligament, marked G, called the tendon of the Flexor Perforatus, there being no such tendon in the figure.

The author still holds to a nomenclature which, to a certain school of thought, is antiquated. It would not have been difficult to have introduced the more modern international terms in brackets as an alternative, and so made the book generally more easily understood by a wider circle.

The following subjects are dealt with in succeeding chapters: Method of examining the foot: Operations on the foot: General Remarks: Faulty Conformation;

Chapters 7—12, covering 350 pages, deal with the various diseases and injuries of the foot.

Chapter 13, treats of suitable Shoeing for Modern Road Surfaces.

Readers must keep in mind that this book is essentially one for the guidance of the general practitioner, and the latter will find it written in such a manner that, when he takes it down from his shelf, he will wander on from the point for which he desired to consult it, as the writer has incorporated in the text not only his own experience, but has drawn freely upon periodical veterinary literature, quoting the writings of many well-known clinicians of the past and present.

As is well known, Mr. Reeks has for many years held the honoured position of examiner in Veterinary Pathology and Bacteriology, and this alone should be sufficient proof of his capabilities as a pathologist, but this book shows him also as an acute clinical observer, for his description of processes of disease and their symptoms has been excellently done.

It is when we come to the treatment of the various conditions that we find the author has been most assiduous in collecting the various methods employed; the chief trouble will be for the reader to decide which method to adopt when faced himself with a concrete case of the particular condition.

No doubt many will disagree with the author's predilection for the use of poultices in the treatment

(*Continued at foot of next column.*)

DIVISIONAL REPORTS.

Central Division.

PARASITIC IRRITATION AS A FACTOR IN CANCER CAUSATION.

The presence of Dr. H. A. Baylis and Dr. L. W. Sambon, who contributed interesting discourses on their recent researches in connection with the parasitic theory of the cancer causation, added greatly to the enjoyment of a well-attended meeting of this Division, which was held at 10 Red Lion Square, London, on Thursday, March 5th, 1925.

The President, Major P. J. Simpson, occupied the chair, and there were also present, Messrs. Brown, Bryden, Bushman, Davenport, Dunkin, Gray, Heath, Hobday, Irving, Jones, Livesey, H. King, N. S. King, W. S. King, Kirk, McIntosh, Sir John Moore, Messrs. Parkin, Perryman, Rowe, Sheather, S. H. Slocock, Stevens, C. N. Thompson, W. N. Thompson, Townson, Williams, A. E. Willett, J. Willett, Wilson, Professor Wooldridge and Colonel Young, together with Mr. J. F. Macdonald, Hon. Secretary.

Visitors.—Dr. H. A. Baylis, Dr. Louis W. Sambon, Messrs. Baxter, Conisbee, Gregory, Richardson and Sams.

At the outset the PRESIDENT welcomed Drs. Baylis and Sambon, introducing them as two very distinguished scientists. Dr. Sambon, an epidemiologist of world-wide renown, had come in conjunction with Dr. Baylis, of the Natural History Museum, South Kensington, to show them some parasitic specimens. (Applause.)

Dr. SAMBON: Greatly honoured by your invitation to attend this meeting, I wish to thank you most heartily.

(*Continued from previous column.*)

of injuries of the feet, particularly suppurating corns, but Mr. Reeks disarms criticism by weighing evidence for and against their application. We think the author himself unconsciously states a strong case against them by advocating the final use of strong astringent antiseptics to counter the excessive growth of granulations.

The idea that infected wounds of the feet, once underun horn is removed, require treatment other than we would apply to infected wounds elsewhere on the body, is neither theoretically nor practically sound, and we would have preferred to have seen less stress laid upon the use of poultices and so-called antiseptic baths, as they are so apt to be abused and to lead to slip-shod methods of surgical treatment.

The author is to be congratulated upon producing a volume which will stimulate much thought among all who are in general practice, for it gives the author's personal experience and the accumulated experience of all the best literature which has been written on the subject welded into a very readable volume.

My epidemiological work has brought me frequently in touch with the veterinarian in several countries, and repeatedly have I felt how desirable it would be to promote a closer fellowship between the "horse doctor" and his colleagues the "barber surgeon" and the "slave physician."

The majority of the diseases which affect man are common to the lower animals, more especially the domesticated animals. I need not remind you how many epidemics have their origin in epizootics. Plague is probably the best known example, but by far the least important. No efficient prevention is possible in any disease unless we are fully cognisant of its zoological distribution and able to cope with it throughout the gamut. The veterinarian is at the outposts of our defence line. It is he who can warn us of coming epidemics through the study of epizootics, just as the meteorologist warns us of coming storms through the study of weather disturbances caused by passing meteorological formations. I look forward to the day when the association between sanitarian and veterinarian shall be of the closest. (Applause.)

The *Minutes* of the meetings held in December, January and February, which had appeared in the *Record*, were taken as read and confirmed.

Apologies.—Messrs. E. L. Stroud, H. L. Roberts, F. W. Willett and T. L. Wright.

Nomination.—Mr. W. C. Auld, of Staines.

Elections.—Messrs. E. Lionel Clarke (Kew Gardens) and J. Pickup (Barnet) were elected Fellows of the Society.

Professor WOOLDRIDGE, whose entry was greeted with applause in signification of the pleasure felt by the Fellows on his recovery from his serious illness, said: May I take this opportunity, in view of that welcome, to thank you very very heartily indeed, for the kind message you sent to me on the occasion of my illness. I can assure you that, at such a time as that, when one is lying very seriously ill, an expression of goodwill does one an enormous amount of good—more, indeed, than can be imagined by those who are kind enough to send it.

MORBID SPECIMENS.

The PRESIDENT said that he knew he would be expressing the wish of the meeting by calling upon Drs. Baylis and Sambon to introduce that section of the proceedings.

Dr. H. A. BAYLIS exhibited the following specimens:

1. The Nematode worm *Gongylonema, in situ* in the œsophagus of a sheep from Italy.
2. Examples of the same worm, extracted from the œsophagus of a goat.
3. A series of the insect intermediate hosts of *Gongylonema*.

Addressing the meeting, Dr. Baylis said: I am very glad to have been kindly given this opportunity of addressing a gathering of veterinary men, though I did not come prepared to make a speech, but merely with the intention of exhibiting some specimens which I hope may be of some interest to yor

The parasite to which I wish specially to draw your attention does not appear to be very well known to veterinarians. It is generally called *Gongylonema scutatum*, or, as in some of the older text-books, *Spiroptera scutata*. It forms sinuous galleries in the thickness of the mucous membrane of the œsophagus and sometimes of the stomach, and, in some countries, at any rate, is very common in all the domestic ruminants—sheep, goats and cattle. It would be of great interest to know how commonly it occurs in England. At present it is doubtful whether any records exist of its occurrence here. In certain districts of Northern Italy, where Dr. Sambon and I made a special search for *Gongylonema*, we found it to be extraordinarily abundant, but most of the veterinary men to whom we spoke appeared not to be aware of the existence of such a worm. The œsophagus of slaughtered animals is, of course, comparatively rarely examined.

As the result of a study of various reputed species of *Gongylonema*, I have been led to the conclusion that the form (*G. scutatum*) found in ruminants is identical with the *G. pulchrum* of pigs in Europe, as also is the *G. ransomi* of pigs in America. It also seems very probable that the *G. neoplasticum* of rats and other rodents, which has been shown by Professor Fibiger, of Copenhagen, to play a part in the production of cancer in rats, is again identical with *G. pulchrum*. Some species of *Gongylonema* has been recorded in man at least four times in America and twice in Italy, but unfortunately the specimens found have either been immature, and therefore specifically indeterminable, or else the descriptions given have been insufficient for the indentification of the species. In all probability, however, the human form will prove to be also *G. pulchrum*.

The special interest of our study of *Gongylonema* in Italy is that we were working in districts where human cancer of the œsophagus was extremely prevalent, and where almost all the cases of cancer had this particular localisation; and at the same time we found *Gongylonema* to be exceedingly common in the domestic animals—so much so that at Faenza, for example, where we examined some 25 or 30 sheep, we saw only one that was free from the worm. In these circumstances it is not unnatural to suspect some connection between the occurrence of cancer of the œsophagus and stomach and the prevalence of a parasite which has these organs as its peculiar habitat.

With regard to the life history of *Gongylonema*, I should point out that its intermediate hosts are cockroaches, various species of "cellar-beetles" (*Blaps*) and their larvæ, and the mealworm beetles (*Tenebrio*) and their larvæ, the mealworms. In America and in Northern Africa various kinds of dung-beetles have also been incriminated as intermediate hosts. Some animals, such as rats, will, of course, deliberately eat insects such as cockroaches and mealworms. In the case of the ruminants, however, it is obvious that infection with *Gongylonema* can only be acquired by the accidental ingestion of the insects along with food. The dung-beetles may

easily be swallowed in this way in the fields, but *Blaps* is usually found either in human habitations or in stables and cow-houses, where the beetles and their larvæ are frequently present under the litter on the floor or among accumulated rubbish close to the walls.

I should be glad of any information as to the presence of *Gongylonema* in this country, and if any veterinarian present can tell me anything about it, or will look for specimens and send anything he finds to me at the *British Museum (Natural History), Cromwell Road, South Kensington*, I shall be extremely grateful.

Major HOBDAY: I have here rather a good specimen, which is of value from a clinical aspect, of a portion of prolapsed bowel from a zebra. One day last month I was called in consultation by Mr. Morgan, of Faversham, in a case of repeated prolapse of the bowel in a zebra. It had been put back six times, but had always prolapsed again. The animal was twelve months old. There were two of them, male and female, just over from Pretoria. The particularly interesting part of the case is that there were present thousands of bots which were causing this prolapse. There were huge nests of them. There were, in addition, large numbers of ascarides. Amputation of the prolapsed portion of the rectum was carried out, and the animal appeared to be doing well for twenty-four hours, when it collapsed and died. The other died shortly after, from some other cause. The question of these parasites causing sufficient irritation of the bowel to give rise to prolapse is, I think, something comparatively unknown, and I brought the specimen here for that reason. I sent the specimen to Mr. Noel Pillers, and this is his report:—

"The difficulty with the bots is very great, because the keys to diagnosis are for groups found in animals such as the zebra or horse or such animals which live in foreign countries. The specimens are (1) a portion of the amputated rectum of zebra, with bots; (2) upper and lower incisors of zebra; (3) two testicles from abdomen of ditto; (4) three feet of small bowel (ligated) packed with large white worms; (5) stomach heavily laden with bots. No. 1 will be dealt with later. No. 2 needs no comment. No. 3, the testicles were apparently much smaller than for an ass of the same age. Anatomically they appeared normal. On section they were somewhat soft and brown in colour and were unsuited for histological examination.

"No. 4.—The bowel contained some hundreds of *Ascaris zebrae*, Sckrijabin, 1916, according to the description of G. Theiler, in '*The Strongylids and other Nematodes parasitic in the intestinal tract of South African equines.*' Its chief characteristic is three accessory lips to the three main ones of the typical *Ascaris*.

"If the life history of this species be like that of *A. lumbricoides* of the pig and man, *viz.*—infective eggs are taken in by ingestion, these hatch in the alimentary canal, reach the liver, then the lungs, by way of the main vessels, heart and pulmonary artery, then up the respiratory tract and down the œsophagus to the smaller intestine, where they become adult—then, I think, the animals, if in a limited space, must have been exposed to a very heavy infestation, and such would easily explain most of the *post-mortem* findings.

"No. 5.—The stomach contained a very large number of bots, the largest of which were about half the size of a fully-developed bot of *Gastrophilus intestinalis* of English horses. Mr. Potts, B.A., of the Liverpool School of Tropical Medicine, identified this as *Gastrophilus ternicinchus*, but there are several other species present, which, up to the present, have not been determined owing to apparent differences in the description given by various workers. These will be gone into and reported on again.

"No. 1.—The rectal bots unfortunately fall into the group which has not yet been cleared up.

"A very few of the small nematode *Habronema microstoma* were found in the gastric membranes; the larvæ of this worm enter the larvæ of *Stomoxys calcitrans* in the fæces, and ultimately reach the lips and stomach of the host by means of the adult fly. Ware recently reported that species in England.

"*General.*—The case shows (i) how flies and nematodes may be introduced into a country; and (ii) the value of the thesis which many have advocated, that the fæces of all wild animals should be examined before they are reported on for health."

I have here a couple of instruments with which I met by accident at a veterinary surgeon's establishment. He very kindly gave me these to show you this afternoon. They are his own invention, and he produced them to meet his own requirements in practice. One is a small instrument known as a scarifier, for producing a raw surface in place of the non-healing fibrous internal coat of the urachus. It can be adjusted to any size of urachus, and is just a roughened instrument used with a rotary movement. The inventor is Mr. Ernest Wardrop, of Wisbech. This second instrument is a breech presentation retractor. This very strong steel instrument, anchored in the pelvic cavity (anterior to the pelvic bone) or in the obtuator foramen, gives one absolute directing power over the fœtus. The instrument is passed through the vulva of the vagina of the dam and through the anus of the fœtus into the pelvic cavity. The top plate with the handle is then pushed sharply forward, when the fingers of the instrument will open transversely and grip in front of the pelvic femoral joints. The pin on the spring then passes through the hole in the lower plate and locks the instrument, when the fœtus can be withdrawn.

Colonel YOUNG: The specimen which I have here is rather a rare one in this country, so far as my experience goes. It is a case of *Balbiana gigantea* found in the region of the root of the tongue in the sheep. Sir John McFadyean, years ago, said these specimens were so rare that he would be prepared to pay any butcher who could get hold of them. Sarcosporidiæ are not uncommon—we get them in the sheep and also in the pig. Some time ago Captain Kirk sent me a specimen of frozen beef in which I was able to identify sarcosporidiæ. These are not so big as some I have seen,

but in thirty years it is only the third specimen which has come under my notice. I should like to say a few words later concerning Dr Baylis's specimens.

Mr. S. H. SLOCOCK: I will first of all apologise for my son, who regrets not being able to come to the meeting, for which he was bringing this specimen. It is a specimen of a broken back in a horse. The horse was quite a good hunter and I understood that he jumped three fences and then put a foot wrong at a little bank and came down. He was unable to rise, and the veterinary surgeon who attended during my son's absence was unable definitely to say that it was a case of broken back, for judging from the fact that the horse had a fair amount of movement in its hind limbs, he naturally assumed that the spinal column was intact.

The horse died three or four hours afterwards from internal hæmorrhage. The specimen will show you a very extensive fracture of the last lumbar vertebra. One would deem it impossible for a horse to have any control or movement at all with that. There is a fusion of two bones, and one would naturally have supposed that some want of control of his loins would have been shown. I understand that the animal had been hunted satisfactorily up to this time. He was about eight years old.

Captain KIRK exhibited a new pattern of dog gag which he had had made to his order by Messrs. Arnold and Sons. It was an intermediate pattern between the "Gray's" gag and the "Reliance" gag. He explained that each of these had serious faults, which had been eliminated in his modification—without extra cost. As Messrs. Arnold intend to publish a description of this gag, with figures, we do not propose to go further into the details at this juncture.

The PRESIDENT: I am sure we have all had a most interesting time listening to Dr. Baylis, whose researches have evidently been very exhaustive, and if their deductions should prove correct, they have, of course, made a very great advance with regard to the subject of cancer. I should like to my give personal thanks to those gentlemen for coming forward and giving us such an interesting dissertation on this parasite.

Colonel YOUNG: I should like, in the first place, to express my very great pleasure—I am sure, the pleasure of you all—at the presence of Dr. Baylis and Dr. Sambon here to-night. (Hear, hear). It is a step in the right direction towards solving some of the problems which are puzzling to both the veterinary and the medical professions. Dr. Baylis is anxious to know if these parasites are found in the sheep in this country. After an experience of thirty years, most of them devoted to meat inspection, I must admit that I have never seen a parasite of this kind in the œsophagus of the sheep, but the œsophagus of the sheep is not subject to careful examination, as a rule, and if this were done it is possible that the parasite might be found. With regard to the œsophagus of the ox, here we are on different ground, because the œsophagus of the ox has to be examined, and I cannot think it would have been possible that the presence of the parasite should have escaped the observation of all our inspectors. Dr. Baylis has asked that some help should be given in connection with the solving of this problem, and I at once place myself unreservedly, on behalf of the profession, at their service to search for these parasites. With regard to pigs, I have never seen this parasite in them, though in them the œsophagus is not cleaned, for it is never used. I do not know if Dr. Baylis has had any experience of *Onchocerca gibsoni*. This does resemble the parasite of that name found in cattle in Australia. When the parasite was first discovered it was identified by some people as a Spiroptera at that time. I should like Mr. Baylis to say whether he knows this parasite, and what he thinks of the connection between the two.

Mr. SHEATHER: I have one question I should like to ask Major Hobday: Will he give us his opinion as to what would have happened if he had put in a tracheotomy tube in his case of the zebra with a prolapsed rectum, instead of performing amputation?

Professor WOOLDRIDGE: I should like to thank Dr. Baylis for his excellent exposition of these parasites, and, with Colonel Young, I may say I have never seen any specimen in this country. But, as he says, the œsophagus is not examined except in the case of the larger ruminant.

A very interesting feature to me is the long, corkscrew-like gallery in which the parasite is found. That demonstration, of itself, will assist some of us in looking for it and possibly discovering it in this country. An important and interesting feature is the possibility of these parasites in different species, or the so-called types, being one and the same, and the fact that the human subject, being susceptible to it, may contract it from one of the other species. This will constitute another danger and a link for common action with regard to its exclusion.

I have met with several instances of young zebras imported into this country being affected with prolapsed rectum, and in no instance have I found such an infestation with parasites as in the case which came before the notice of Major Hobday, but I should have been hesitant in saying that the presence of the parasites was responsible for the prolapse.

I do not know whether or not I shall be in order in referring to the parasite to which Colonel Young has made reference. The female *Onchocerca gibsoni* is a very long worm indeed, and it is in no way connected with the parasite which has been presented to us to-night.

Major DUNKIN: In connection with *Gongylonema scutatum* and its possible association with the causation of cancer, I should like to ask Dr. Baylis if he can explain the following curious fact: I believe it is a fact that the rat sarcoma described by Rous has been passed successfully from rat to rat without the aid of this parasite. Again, I believe it is a fact that the parasite described by Dr. Baylis is present in various of the lower animals, and at the same time cancer in these animals is not only rare but in some instances unknown. Does that not suggest that the parasite described by Dr. Baylis is not always the cause

of cancer in this particular instance, or, if it is only in some instances, is it not because it contains some body which is capable of cancer production? If that is so, do we not revert to the old and oft-quoted theory in regard to the cuasation of cancer?

Major HOBDAY: Replying to my questioner, on theoretical grounds I think the insertion of the tracheotomy tube in the case of the worm-infested zebra, would have stopped the straining, but I am afraid I did not think of that.

Mr. SHEATHER: In purpura hæmorrhagica I have used it in several cases and the horse always got well.

Major HOBDAY: It is commonly done in uterine prolapse in the cow.

Dr. BAYLIS: I am very glad indeed that our exhibit has aroused so much interest. With regard to what Colonel Young said concerning *Onchocerca gibsoni*, I am afraid I know little about it, but I know that Onchocerca belongs to a different family from Gongylonema, which belongs to the Spirudidæ, whereas Onchocerca is one of the Filariidæ. *Onchocerca gibsoni* differs considerably from *Gongylonema* in its habitat; but there is another species, *Onchocerca armillata*, which lives in the lining of the aorta of cattle, and I have seen photographs of it which bore an exceedingly close resemblance to the picture presented by *Gongylonema*.

Re Major Dunkin's remarks as to rat sarcoma, I think I should like Dr. Sambon to reply to that, because he is more of a pathologist than I am. I should like to explain that I know enough about Dr. Sambon's theories with regard to parasites and cancer, to know that he does not attribute the causation of cancer directly to gongylonema or to any other worm, but regards worms as merely one of many possible predisposing causes introducing some other factor.

Dr. L. W. SAMBON: When Professor Hobday asked Dr. Baylis and myself to show you our gongylonema specimens in order to draw your attention to this œsophageal nematode, hitherto unrecorded from Britain, I suggested that Dr. Baylis might state how his study of the material collected in Italy had led him to reduce to one species—*Gongylonema pulchrum*—the several described gongylonemas found in European oxen, buffaloes, sheep, goats, horses and hogs. I had no intention to address you on the subject of cancer, but, since an explanation has been requested concerning a possible association between cancer and gongylonema, I am bound to make answer. Indeed, I seize the opportunity eagerly, because I should not like you to go away with the idea that I consider gongylonema the one and only cause of cancer in man. Far from it, if gongylonema does play any part in the etiology of cancer, it can only be as one of several worms whose parasitism may favour the production of the tumoral disease. I am anxious to make this quite clear, because, otherwise, any good work I may have been able to achieve would pass unheeded and some absurdity would be tacked on to me, as in the case of sleeping sickness, when one of our leading medical journals made me say that the deadly African lethargy was caused by the Dusky Tsetse fly and other *butterflies*.

With regard to cancer, you know the prevailing theories. Among others it has been attributed to sunlight or radium, to tar or arsenic, to wine or cider, to embryonic residues or mutinous tissue-cells, to the erect attitude of man or incestuous intercourse between some of our body cells, to endocrine disturbances or the increasing use of machinery, to heredity or food-preservatives, to civilisation or constipation, to moral and physical sufferings, or to certain foods, such as roast pork, white bread, tomatoes or water-cress.

The food theory, one of the oldest, is now in fashion again, albeit in its new vitamin dress. Indeed, what disease is not attributed to-day to the lack or excess of some particular vitamin!

Any one who takes up the study of cancer is at the very outset bewildered by the conflict of opinions and by the unreliable nature of some of the *data*. Even statistics, as now compiled, are of little use, often misleading. All is confusion. Yet, I believe, we already are in possession of all the facts that shall eventually explain the seemingly mysterious. We have before us the thousand and one fragments of a mighty jig-saw puzzle. But we must piece them together fittingly.

With a special and somewhat extensive experience in tropical epidemiology and parasitology, I believe the solution lies in the hitherto neglected epidemiology of cancer, in its natural history studied in the field.

Unfortunately, to-day, instead of relying on direct observation, scientists favour the complicated and often less reliable methods of the laboratory. Personally, I prefer the light of the open field to the darkness of the laboratory—the lesson that all can read to the cryptograph of the necromancer.

"Let us hope," said the late Director of the Imperial Cancer Research Fund, "let us hope that the dangers of cancer houses will cease alike to alarm the public and divert the energies of investigators from fruitful lines of inquiry." I think otherwise.

(*To be continued.*)

Dumfries and Galloway Division.*

A meeting of the above Division was held in Lauries' Mart, Dumfries, on Tuesday, October 7th, 1924. There were present Messrs. Milligan (President and Chairman), Lindsay, McKinlay, Waddell, Jackson Young (Board of Agriculture), Mackenzie, Angler, Young (Dumfries), Edgar, Imrie, Danskin, Lawson, Little, Littler, Wishart, Bell, Hewetson, Baird, Croudace, Armstrong, and MacAlister (Secretary and Treasurer).

Major Hobday gave surgical demonstrations on three subjects.

(1) The laryngeal operation for roaring, which was performed in a very able manner, the operator explaining the technique and the various stages of the operation as he proceeded: his remarks were very interesting and instructive.

(2) A plantar neurectomy on a hind limb. This was skilfully performed and clearly demonstrated.

(3) This operation was most interesting: the case being that of a Clydesdale mare with a chronic nasal

* Received on February 10th, 1925.

discharge, accompanied by an enlargement of the nasal bones. After some discussion, the operator trephined through the nasal bone at the seat of enlargement, and on exploring the nasal cavity, a molar tooth was discovered and removed. The frontal sinus was then trephined and the operation completed.

The operations finished, the company adjourned to the Station Hotel for lunch, after which the annual meeting was held.

The minutes of the previous meeting were read and adopted.

The President moved a vote of thanks to Major Hobday for his kindness in travelling all the way from London to demonstrate to the Society. Mr. Milligan further remarked that, although their's was a small society it was a very virile one, and he was pleased to see such a good turnout of members, neighbouring practitioners and also of some who had come a very long distance. He had to thank them all and hoped it would lead to further meetings as amiable and friendly as that one had been.

Mr. Milligan, continuing, said that Major Hobday had performed the operations with his usual skill and splendid technique, and that he was sure he was expressing the thoughts of all present in stating that no better or more instructive meeting had been held by any society for a very long time. This was due in large measure to the presence of Major Hobday.

Mr. Edgar seconded, and Major Hobday thanked the members in suitable terms. He would always be ready to come and help them at their meetings, as any help he gave to a Society such as their's was help to his profession.

With regard to the operations, he had little to say, except that the fact of finding the tooth in the nasal cavity was a most extraordinary thing. He had seldom met with this, and it could only be revealed by X-ray photographs.

ELECTION OF OFFICERS.

President: Mr. N. H. MacAlister.
Vice-President: Mr. Waddell.
Hon. Secretary and Treasurer: Mr. Young.
Hon. Auditors: Messrs. Waddell and Baird.
Places of Meeting: February meeting to be held at Castle Douglas, and the Autumn meeting at Carlisle.

Major Hobday was appointed an honorary member of the Society, and he returned thanks to the members.

The President moved a vote of thanks to Mr. Laurie for the use of the mart, and to the owners of subjects, which he hoped would all do well.

New Members: Messrs. Bell, Hewetson, Croudace and Armstrong.

A letter was read with reference to the attendance of Veterinary Surgeons at Dog Shows, and it was resolved that the resolution to ask for payment be supported.

Mr. W. Jackson Young, F.R.C.V.S., D.V.S.M., showed numerous photographs of the larvæ of sheep scab, and gave a very interesting explanation to the members present.

NOTES AND NEWS.

The Editor will be glad to receive items of professional interest in these columns.

Diary of Events.

Mar. 31st—N.V.M.A. Committee Meetings (at 10 Red Lion Square, W.C.): Finance, 2 p.m.; Biological Products, 2-30 p.m.; Parliamentary, 3 p.m.; Veterinary Inspectors and Public Health, 4 p.m.

April 1st—N.V.M.A. Council and Committee Meetings (at 10 Red Lion Square, W.C.): Appointments, 11 a.m.; Organising and Publicity, 11-30 a.m.; Council Meeting, 1-30 p.m.
Annual Fee of £1 1s. 0d. due to R.C.V.S.

„ 2nd—R.C.V.S. Committee Meetings: Examination 11 a.m., Registration 2 p.m., Parliamentary 4 p.m., Special Sub-Committees Meetings.

„ 3rd—R.C.V.S. Committee Meetings: Library 11 a.m., Finance 12 noon.
Council Meeting 2 p.m.

May 7th—Last day for Nominations for election to Council R.C.V.S.

„ 21st—R.C.V.S. Voting Papers and Annual Report issued.

„ 28th—R.C.V.S. Voting Papers to be returned.

June 4th—R.C.V.S. Annual General Meeting. Earl Haig to attend to receive Diploma of Honorary Associate.

Members are reminded that, by the Articles of Association, those who have not paid their subscription by the end of this month are liable to forfeit the receipt of all the publications of the Association, including the *Veterinary Record*. The Council do not, at the moment, intend to take this drastic step: this intimation, however, will probably serve as a reminder to those who are already in arrear.

We learn that the Treasury have now approved the increased cost of the printing of the Official History of the War—Veterinary Services. Consequently the work will, we are glad to be able to inform our readers, shortly be published.

FOOT-AND-MOUTH DISEASE: DR. SHAW'S REMEDY.

Mr. E. F. L. Wood, Minister of Agriculture and Fisheries, replying in the Commons on Monday to Sir James Remnant, said it was not proposed to build a new experimental station for the purpose of testing Dr. Shaw's remedy for the prevention of foot-and-mouth disease. The premises at Pirbright formerly used by the Ministry as a cattle-testing station, which were being adapted for use by the Scientific Committee on Foot-and-mouth Disease, would be utilized for the purpose. No doses of the remedy had yet been obtained, but he presumed that Dr. Shaw would be prepared to supply them when required. It was not legally possible for Dr. Shaw personally to carry out the tests without a licence granted by the Home Secretary under the Cruelty to Animals' Act, 1876,

(*Continued at foot of first column next page.*)

CORRESPONDENCE.

Alleged Lead Poisoning in Cattle.

To the Editor of The Veterinary Record.

Sir,—I fear it is a little late to crave the hospitality of your columns for further discussion on the case of Brown v. Calvert. My excuse is that only on returning last week from abroad I heard the result of the case, and had the opportunity of reading the very interesting and valuable correspondence thereon in your journal.

I knew the case was pending, for I was approached as to my willingness to appear in support of the defence, presumably on the strength of the description of lead poisoning in my book on Veterinary Toxicology. A perusal of the claim sufficed to satisfy me that I could not possibly lend such support, indeed, I cannot recall any case of the kind in which I should have regarded a win for the plaintiff as a safer prophecy.

I rather formed the impression that the line of defence would be the "insolubility" of lead arsenate. Without entering here into this question,may I—in parenthesis—and speaking as "expert" to "expert"—say that the word insolubility is capable of covering much, and invite the very careful consideration of other experts to the problem of the degree of solution of lead when comparatively small quantities of lead arsenate are intimately churned in comparatively large quantities of digestive juices.

But surprise at the plaintiff's failure is eclipsed by amazement at Professor Dixon's evidence, as stated by Dr. Clough, in your issue of 7th February.

It is not easy to write of this evidence with restraint, and the veterinarians who have demolished the Professor's statements have, I feel sure, exercised very great restraint indeed, in face of assertions which are really a slur on the capacity of the profession.

At any rate, one has the satistaction of feeling that after all we need not re-write large sections of our manuals, and reject the scores of conscientious and accurate records spread over nearly a century of our literature, on the *ipse dixit* of an eminent and learned medical authority, that "lead poisoning could not be acute." Nor need we yet say of lead: "It was almost as difficult to produce lead poisoning as poisoning by iron. A man could consume pounds of it without fatal effects." (Dixon.)

Dr. Clough considers it desirable to define acute lead poisoning, and Dr. Dixon would appear to suggest limiting the designation to cases fatal within 48 hours. As the Professor denies the existence of acute lead poisoning, I presume that he alludes to acute poisoning in general, and I should like to suggest that it is rash to quantify in a pedantic manner, especially as one rarely knows at what time the fatal dose was taken. And certainly from the legal point of view it matters little if death resulted from acute poisoning or from collapse following sub-acute.

But I do suggest, in direct opposition to Professor Dixon, that any bovine showing sudden illness marked by blindness, frenzy, and coma may be diagnosed accurately in nine cases out of ten as the victim of acute lead poisoning.

I most sincerely hope that the Professor will read and answer your correspondents' remarks. In the meantime there has been given a verdict which is calculated to cause grave anxiety to many stock owners.—I am, Sir, yours faithfully, G. D. Lander.

Stone, Ashford,
Kent.

(*Continued from previous page.*)

which, he was advised, Dr. Shaw did not hold; but he proposed to invite him to concur in the suggested scheme of experiments, and to be present during their conduct by the responsible officers of the Ministry's Veterinary Staff.

The Etiology of Milk Fever.

To the Editor of The Veterinary Record.

Sir,—I was much interested in Mr. Pugh's paper on the Etiology of Milk Fever (*Veterinary Record*, 29th November, 1924), and Mr. R. H. Smythe's criticism, Mr. Pugh states: "Milk fever is favoured by excessive feeding just prior to parturition." This seemed borne out in my practice this season. In the late Spring there was unusual growth, with an abundance of soft, easily digested, green feed. The number of milk fever cases was unusually high compared with other years.

In *Veterinary Medicine* (Chicago), November, 1923, S. L. Stewart discusses Parturient Paresis, and says: "It is my opinion that parturient paresis is a condition brought about by a toxin which is produced in the animal body, and that the disease is a toxemia." He, however, seems to regard the uterus as the probable origin of this toxin, and recommends massage of the uterus *per rectum* in addition to inflation of the udder.

One treatment frequently carried out and with success, prior to the adoption of udder inflation, was as follows: chloral hydras, pot. bromid, aa ℥iiss. Give half in a drench with 2 lbs treacle, half the remainder with 1 lb. treacle in 2 hours, balance 2 hours later. This mixture would provide an internal antiseptic, and laxative, a powerful nerve sedative and heart depressant. Why should it bring about recovery in a patient already showing signs of circulatory weakness and approaching coma?

A knowledge of the etiology would give one confidence in dealing with the obstinate case. Nine cows will respond readily and typically to udder inflation alone, no matter in what stage of milk fever. The tenth gives no response, or may rally enough to get up, and then relapse, in spite of repeated inflations. What else must one try? Strychnine, atropin, adrenalin, pituitrin,—all have their advocates. For a long time I used atropin, ½ grain, as a routine part of treatment, but lost that tenth cow just the same, and she is usually a good one and a heavy milker.—Yours faithfully, D. Marshall.

Otago, New Zealand,
11*th February*, 1925.

Capped Elbow and Soundness.

To the Editor of the Veterinary Record.

Sir,—Referring to the letter of Mr. Pottie on the above subject in your last issue, a capped elbow is not in itself an unsoundness, unless at the time it interferes, or in the future is likely to interfere, with the usefulness of the animal.

Probably this horse had a splint and according to present law this would constitute unsoundness, no matter whether the horse was going sound or otherwise; thus the other two examiners were wrong in passing him sound. In reality, with the exception of a few two year olds and a possible rare exception here and there, there is no such thing as a technically "sound horse" according to law—a point that many of us would do well to remember when writing certificates.—Gerald Bloxsome.

Rosemullion, Southwick, Sussex.
March 21*st*, 1925.

The Editor acknowledges the receipt of the following:—

Communications from Messrs. R. E. Alexander, C. Elphick, G. Howie, H. V. Hughes, G. H. Locke and J. D. Pottie.

Report of a meeting of the Derbyshire Division, from Mr. O. V. Gunning, Hon. Secretary.

Report of a meeting of the Dumfries and Galloway Division from Mr. A. Young, Hon. Secretary.

Report of a meeting of the Western Counties Division, from Mr. R. B. Nelder, Hon. Secretary.

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*Ref'ces.: Prof Lander in "Veterinary Toxicology," Prof. Froliner, Neumann's "Parasites of Animals," Prof. Cave in the "Agricultural Gazette," 7th November, 1924, also the Veterinary Adviser to the "Farm and Stockbreeder," in the issue of October 27th, 1924.